

1. INTRODUCTION

1.1 PURPOSE AND NEED FOR AGENCY ACTION

The U.S. Department of Energy (DOE) proposes to implement a comprehensive management program to safely, efficiently, and effectively manage its potentially reusable low enriched uranium (LEU), normal uranium (NU), and depleted uranium (DU). Uranium materials, which are presently located at multiple sites, are to be consolidated by transporting the materials to one or several storage locations, to facilitate ultimate disposition. Management would include the storage, transport, and ultimate disposition of these materials.

This action is needed because of DOE's current missions and functions; increasing budget pressures; the continuing need for good stewardship of resources, including materials in inventory; and continuing DOE attention to considerations of environment, safety, and health. Also, increased pressure on the federal budget requires that DOE take a closer look at materials management in order to ensure maximum cost effectiveness. This includes an examination of feasible uses of this material, consistent with DOE's mission, as well as an examination of management methods that are consistent with environmental requirements and budgetary constraints. DOE needs to implement a long-term (greater than 20 years) management plan for its inventory of potentially reusable LEU, NU, and DU.

1.2 SCOPE OF THIS ENVIRONMENTAL ASSESSMENT

DOE is preparing a programmatic environmental assessment (PEA) to address the proposed action discussed in Section 1.1. The comprehensive management program addressed in this PEA looks at transportation, including preparation of uranium materials for safe shipment, long-term storage, maintenance and disposition. The PEA addresses 14,200 metric tons of uranium (MTU) of uranium materials thought to be potentially reusable; thus, uranium wastes are not part of the scope. Reusable is defined as "uranium material having an economically viable disposition path." The management plan will cover uranium materials that are currently in the form of oxides, metals, and other stable compounds, and which are located at various sites around the United States. The plan will not include irradiated material, material in the form of uranium hexafluoride (UF₆), uranium that is enriched to 20% or greater in ²³⁵U, or uranium enriched in ²³³U.

Storage would occur until future sale or reuse alternatives are ready for decision making. DOE will evaluate several proposed alternative DOE storage sites under consideration: the Portsmouth Gaseous Diffusion Plant (PORTS) in Ohio, the Paducah Gaseous Diffusion Plant (PGDP) in Kentucky, the Y-12 National Security Complex and East Tennessee Technology Park (ETTP) in Tennessee, the Savannah River Site (SRS) in South Carolina, and the Idaho National Engineering and Environmental Laboratory (INEEL) in Idaho. Also both western and eastern commercial sites will be considered. Approximately 14,200 MTU will be stored in either one (centralized) location or several (consolidated) locations based on the proximity of sites or the uranium product form. DOE now has potentially reusable uranium materials in 158 locations in the United States; however, the vast majority of these materials are located at only a few sites. These sites have additional uranium materials, which are not part of the Uranium Management Group (UMG) inventory and not addressed by the proposed action.

Because many DOE sites have existing and potential future storage space conflicts, specific buildings and on-site locations could not be accurately determined. A midpoint location within each site is assumed unless otherwise indicated. In addition, the commercial sites to be evaluated are generic sites; that is, they are assumed to be located in the western or eastern United States, but their specific locations are not determined. Consequently, a relative comparison of alternatives is made, and the analysis is programmatic in nature.

The disposition of this surplus material is undefined at this time; however, to provide future flexibility for the disposition of this material, a “bounding” analysis is performed. The objective of this analysis is to establish a bounding scenario such that potential environmental impacts from a variety of disposition options have been considered. The scope of this analysis includes: commercial processing of the material, use of this material in research activities, provision of this material to other government agencies, and/or the sale (international/domestic) of this material. While the uranium materials covered in this PEA are potentially reusable and are not wastes, it is possible that some portion of the inventory could, in the future, be declared waste. Also, in the disposition process, some wastes could be generated. For example, product containers, once emptied, could become waste. The analysis in this PEA addresses, among other things, handling, repackaging, and transportation of the uranium product. The analysis also covers these aspects of waste production associated with the UMG Program. It is understood that a disposition option not covered by the bounding analysis may require further National Environmental Policy Act of 1969 (NEPA) activities.